

## REDUVIOIDEA FROM NEW SOUTH WALES.

NOTES AND DESCRIPTIONS (HEMIPTERA).

By PETR WYGODZINSKY, Instituto de Medicina Regional, University of Tucumán, Argentine.

*(Communicated by J. W. T. Armstrong.)*

(Thirty-four Text-figures.)

[Read 29th March, 1950.]

## INTRODUCTION.

It is to be supposed that Australia is one of the regions of the Earth least known as to its fauna of the *Reduvioidea*. There is no doubt that the continent possesses many highly interesting elements, the study of which might shed new light on many questions of phylogeny and zoogeography.

It was therefore with great pleasure that we accepted for determination the specimens sent by Mr. J. W. T. Armstrong, of Callubri, Nyngan, New South Wales. All of these have been collected in New South Wales and several species and even genera have proved to be new to science. Our sincerest thanks are due to Mr. Armstrong, whose excellent field work is of great value to Australian entomology.

The present paper, being the second of a series (the first being Wygodzinsky, 1949), contains locality records and notes for some known species, as well as the description of two very interesting new genera, one belonging to the *Enicocephalidae*, the other to the reduviid subfamily *Emesinae*. We are obliged to Professor Dr. R. L. Usinger, of Berkeley, California, for information regarding the *enicocephalid*.

Following Mr. Armstrong's wishes, the types of the new species and certain other specimens are being deposited in the Australian Museum, Sydney. We thank Mr. Armstrong for the kind permission to retain some specimens for our own collection.

Dr. I. Mackenzie Lamb very kindly assisted us in linguistic matters, for which our thanks are due to him.

## Family ENICOCEPHALIDAE.

*USINGERIELLA*, gen. nov.

*Enicocephalinae*. Medium-sized, slender species; body surface shining, with sparse delicate bristles, and small setiferous tubercles at certain regions of the body.

Head elongate, constriction behind eyes not very pronounced, the posterior lobe subrectangular, somewhat broader posteriorly than in front. Eyes of moderate size. Ocelli situated laterally at anterior border of posterior lobe of head. Rostrum short and stout, first joint short, second about twice as long, third short again, delicate in lateral view. Antennae not quite as long as head and pronotum together, the first joint shortest, the other three subequal, the last one very faintly spindle-shaped.

Pronotum unarmed, strongly flattened on disc above. Anterior lobe transversely rectangular, with a fovea on disc on either side, anterior and posterior lobes very short, the former subtrapezoidal, the latter transversely band-shaped, shallowly but distinctly emarginate on hind border. Anterior and median lobe with a median longitudinal impression. Pronotum laterally with 1 + 1 carinae beset with numerous small setiferous tubercles. Scutellum broad at base, subtriangular, somewhat pointed posteriorly, its disc flattened, smooth.

Forewings entirely membranous, all veins with slender bristles, which are more numerous at margins of wing. Venation characterized by its closed discal cell, basal cell wanting; stigma not perceptible.

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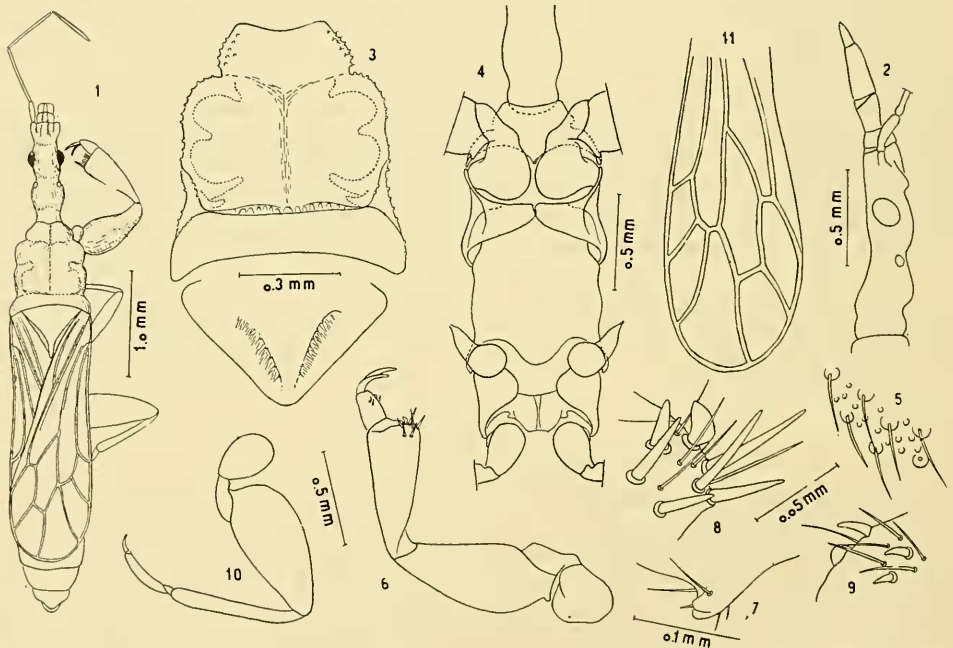
Anterior coxal cavities closed behind. Front femora strongly incrassate, with a small process ventrally near its base. Fore-tibiae strongly dilated. Anterior tarsi one-segmented, with two strong subequal claws. Mid-legs slender and short; hind-femora strongly thickened. Mid- and hind-tarsi two-jointed.

Abdomen without special features. Male genital characters unknown.

Genotype: *Usingeriella boganensis*, sp. n.

We have great pleasure in dedicating this new genus to Professor R. L. Usinger.

It is somewhat difficult to place *Usingeriella* in one of the tribes of the Enicocephalinae adopted by Jeannel (1941), owing chiefly to the impossibility of examining the genitalia of the male; most probably it belongs to the *Systelloderini*. By its wing venation, *Usingeriella* approaches *Nesenicocephalus* Usinger, 1938, from the Pacific region, a genus which was not known to Jeannel (1941). Ours differs from *Nesenicocephalus* by numerous characters, such as the much longer head, the very differently shaped pronotum, the strongly thickened front legs, the posteriorly closed anterior coxal cavities and the presence of small setiferous tubercles on various body regions. We are informed by Dr. Usinger (in litt.) that our new genus also seems to have affinities with the species described by Bergroth (1907) as *Gamostolus tonnoiri*, from New Zealand.



Wygodzinsky del.

Text-figs. 1-11. *Usingeriella boganensis*, gen. nov., sp. n., female, holotype.

Fig. 1, general aspect. Fig. 2, head, lateral view. Fig. 3, pronotum and scutellum, as seen in microscopical preparation. Fig. 4, thorax, seen from below. Fig. 5, setiferous tubercles of pronotum (high magnification). Fig. 6, foreleg. Fig. 7, process at base of fore-femur. Fig. 8, group of spines at apex of fore-tibia. Fig. 9, group of spines at ventral surface of fore-tarsus. Fig. 10, hind leg. Fig. 11, veins of forewing.

#### USINGERIELLA BOGANENSIS, SP. N.

##### Female.

Length to apex of abdomen 4.5; maximum width of pronotum 0.75 mm.

Colour of head to base of antenniferous tubercles, as well as pronotum, fuscotestaceous; anterior portion of head, rostrum, antennae, legs, scutellum, abdomen and

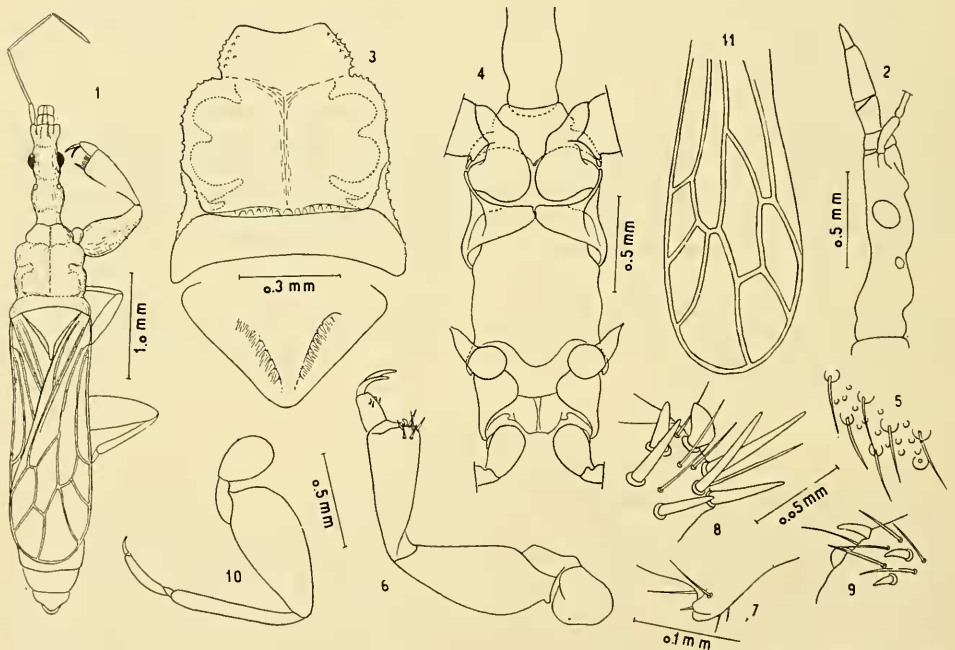
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##### Female.

Length to apex of abdomen 4.5; maximum width of pronotum 0.75 mm.

Colour of head to base of antenniferous tubercles, as well as pronotum, fuscotestaceous; anterior portion of head, rostrum, antennae, legs, scutellum, abdomen and



membrane testaceous; fore-tarsi and claws ferruginous; setiferous tubercles dark brown. Eyes and ocelli reddish.

Body surface slightly shining, beset with sparse bristles of moderate length. Setiferous tubercles in small number, present on lateral and ventral surface of posterior lobe of head, ventral surface of fore-trochanter and femur, prosternum (rather numerous), lateral regions of pronotum, anterior acetabula, meso- and metapleura, sides of carina of scutellum and thoracic sterna.

General shape as in Text-fig. 1. Forewings somewhat shorter than extended abdomen.

Head as in Text-figs. 1-2. Eyes relatively small; their distance dorsally about three times their width, seen from above. In lateral view the eye does not attain the dorsal and ventral surface of head. Postocular region of head slightly rounded, about as wide as long. Rostrum as in Text-fig. 2, curved backwards in life. Length of first joint of antennae 0.2 mm.; relative length of joints I-IV = 1:2.7:2.5:2.3. All joints with slender bristles in small number, rather inconspicuous. Last joint slightly spindle-shaped.

Pronotum as in generic description; shape and relative size of the three lobes as in Text-figs. 1 and 3. Suture between mid- and hind-lobe with small shallow excavations. 4+4 apodemes visible in microscopical preparation (Text-fig. 3).

Legs as in generic description and Text-figs. 6-10. Process at base of fore-femur as in Text-fig. 7. Spines at inner apical angle of fore-tibia as in Text-fig. 8, five rather slender and two very short ones, one of the latter widened apically; spines of inner surface of anterior tarsus as in Text-fig. 9.

Venation of forewings as in generic description and Text-figs. 1 and 11.

Type: One female, holotype, in the Australian Museum, Sydney.

Locality: Bogan River, N.S.W.\* Armstrong coll.

It is to be hoped that the comparison with additional species of the genus will allow us later to establish the truly specific characters of the insect in hand.

#### Family REDUVIDAE.

##### Subfamily EMESINAE.

##### EMPICORIS RUBROMACULATUS (Blackburn, 1889).

*Localities*: Bogan River, N.S.W., J. W. T. Armstrong coll. (one male, author's collection); Acacia Plateau, N.S.W., J. W. T. Armstrong coll. (one male, in coll. Armstrong, one female, Australian Museum).

This is a cosmopolitan species.

##### ARMSTRONGULA, gen. nov.

Rather small, delicate species. Body surface smooth, opaque, not hairy. Adults winged or apterous.

Head very short, rounded behind eyes; ante- and postocular region of about equal size. Ocelli wanting; transversal furrow between eyes present. Ventral surface of head with 1+1 rows of numerous long and delicate spines. Rostrum slender, not elbowed, its joints of subequal length; upper (morphologically ventral) surface of first joint with several long spine-like bristles.

Antennae inserted dorsally and laterally at anterior third of anteocular portion of head; antenniferous tubercles rather prominent, stout. Antennae long and very slender, second and third joints shorter than first one, the fourth very short.

Pronotum (in winged and apterous form) constricted near hind margin; not pedunculate. Anterior lobe subovate, convex dorsally, posterior lobe not overlapping mesonotum except at anterior extremity. Superior lobe of anterior acetabula with a forwardly and downwardly directed process. Mesonotum subrectangular. Scutellum simple, subtriangular. Metanotum distinct in winged form, knobbed apically. Hind border of prosternum slightly emarginate.

\* Specimens of this insect were taken singly during the spring on the underside of logs, mostly on wet, swampy ground; though recently (November) one was taken in a much drier situation under a board on "red" ground. J. W. T. Armstrong.

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Fore-coxa slender, dorsal surface basally and ventral surface apically with some spine-like erect bristles. Femur rather slender, slightly curved at base. Trochanter and femur with regularly arranged spines of various size; those on femur arranged in four longitudinal series, all of which commence near base of joint: one antero-ventral and one postero-ventral series, the former interrupted near base; the postero-ventral series composed of large spiniferous processes, the antero-ventral series composed of small spiniferous tubercles and slender spines. Between these two series there are on the ventral surface two more complete series, composed of smaller spines only. Fore-tibia over half as long as fore-femur and about as long as coxa, straight, rather stout, somewhat widened apically, ventrally with two series of rather long spine-like bristles. Tarsus much shorter than tibia, together with the latter as long as trochanter and femur together; three-jointed, rather heavily chitinized, ventrally with short simple setae, some of them spine-like, practically bare above. Two short simple claws present. Mid- and hind-legs simple, very delicate, the hind-femora surpassing considerably the apex of the abdomen. Mid- and hind-tarsi three-jointed, the joints of about equal size, not strongly chitinized, hairy on all surfaces; claws simple.

Venation of forewing of the *Ploiaria* type, viz., with one large elongate discal cell, at its base laterally a small elongate submarginal cell. Stigma carried almost to apex of forewing.

Abdomen slender, elongate, subfusiform, somewhat widened near middle. Sternites convex, without median carina.

Genotype: *Armstrongula tillyardi*, sp. n.

This very pretty new genus, which we have pleasure in naming for its collector, is nearly related to the African *Tinna*, specimens of which are before us. *Armstrongula* differs from *Tinna* chiefly by the considerable number of spines on the underside of the head, the slender spines on the upper surface of the first rostral joint (absent in *Tinna*) and the four distinct rows of spines on the ventral surface of the fore-femora.

#### ARMSTRONGULA TILLYARDI, SP. N.

##### *Winged Male.*

Length to apex of forewings 7.0-7.5, maximum width of thorax 0.7-0.8 mm. General colour stramineous. The following regions piceous: head dorsally and laterally (Text-figs. 12-13), rostrum with all of the first, apical two-thirds of the second and basal two-thirds of the third segment laterally; all joints of antennae, with exception of one small whitish annulus at base and apex of first and apex of second joint; pro- and meso-thorax dorsally and laterally as in Text-figs. 12-13; metanotum (post-scutellum) with exception of the whitish apex; two large annuli of fore-coxa which join ventrally; ventral half of fore-trochanter; three large annuli of fore-femur, one sub-basal, one submedian and one subapical, these much wider than the intervening whitish spaces; two large annuli of fore-tibia, one sub-basal and one apical; second and third joint of fore-tarsus; meso- and meta-pleura; lower half of median and posterior acetabula; a streak on lower half of median and posterior coxa; median and hind-femur and tibia; ventral surface of abdomen. Ground colour of forewings greyish stramineous, mottled with brownish (Text-fig. 23); veins of anterior half of wing creamy white, on posterior half, piceous. The dark pigment sometimes fading to reddish, the extension of the reddish pigment obviously variable individually.

Surface of head and pronotum minutely wrinkled, of mesonotum very minutely granulous; at low magnification both appear dull. Pubescence absent. Surface of abdomen ventrally as on mesonotum, beset sparsely with very short bristles that become somewhat more numerous towards apex.

Head as in Text-figs. 12-14; ante- and post-ocular region of about equal length. Transverse constriction between eyes only faintly curved. Eyes large, dorsally about as wide as interocular space, ventrally somewhat more approximated; in lateral view the eyes attain ventral and dorsal surface of head. Antenniferous tubercles stout. Ventral surface of head laterally with 1+1 rows of 7-8 ventrally directed slender spines inserted at regular intervals (Text-fig. 13, and as in Text-fig. 15). Rostrum shining,



Fore-coxa slender, dorsal surface basally and ventral surface apically with some spine-like erect bristles. Femur rather slender, slightly curved at base. Trochanter and femur with regularly arranged spines of various size; those on femur arranged in four longitudinal series, all of which commence near base of joint: one antero-ventral and one postero-ventral series, the former interrupted near base; the postero-ventral series composed of large spiniferous processes, the antero-ventral series composed of small spiniferous tubercles and slender spines. Between these two series there are on the ventral surface two more complete series, composed of smaller spines only. Fore-tibia over half as long as fore-femur and about as long as coxa, straight, rather stout, somewhat widened apically, ventrally with two series of rather long spine-like bristles. Tarsus much shorter than tibia, together with the latter as long as trochanter and femur together; three-jointed, rather heavily chitinized, ventrally with short simple setae, some of them spine-like, practically bare above. Two short simple claws present. Mid- and hind-legs simple, very delicate, the hind-femora surpassing considerably the apex of the abdomen. Mid- and hind-tarsi three-jointed, the joints of about equal size, not strongly chitinized, hairy on all surfaces; claws simple.

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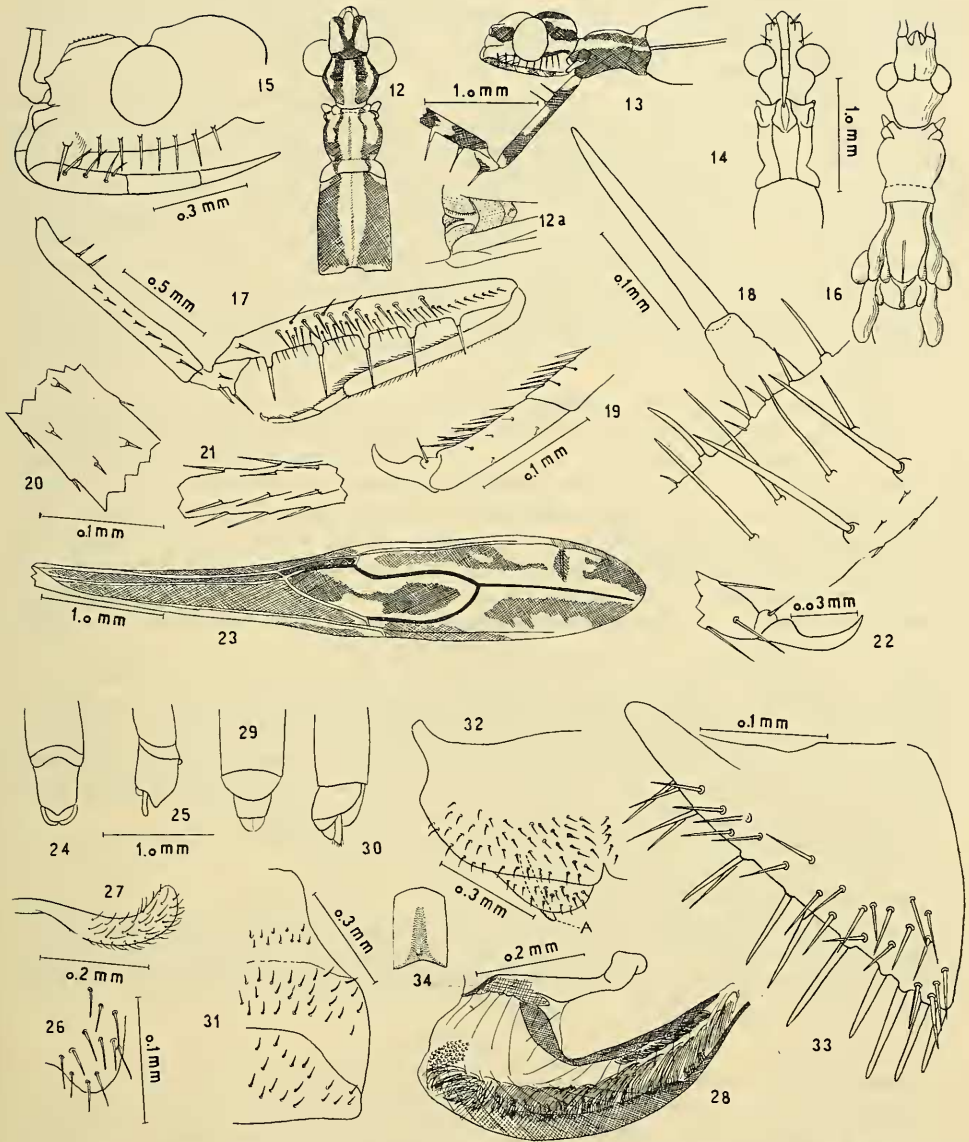
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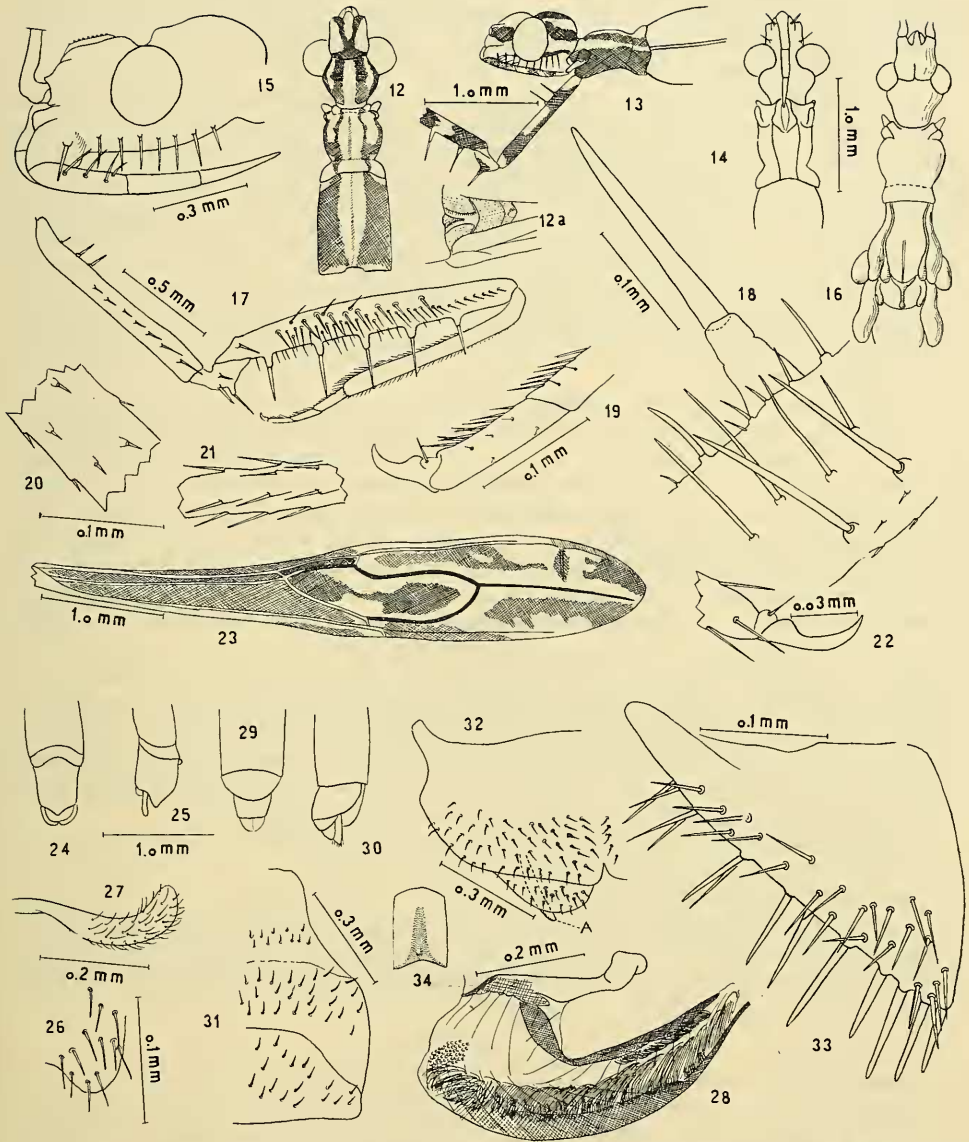




Wygodzinsky del.

Text-figs. 12-34. *Armstrongula tillyardi*, gen. nov., sp. n.

Fig. 12, head and thorax of male, seen from above. Fig. 12a, scutellum and metanotum of same. Fig. 13, same, lateral aspect. Fig. 14, same, seen from below. Fig. 15, head of female, lateral view. Fig. 16, head and thorax of female, seen from above. Fig. 17, foreleg of male, antero-lateral view. Fig. 18, detail of fore-femur. Fig. 19, detail of fore-tarsus, one claw shown only. Fig. 20, detail of hind-femur. Fig. 21, detail of apical portion of hind-tibia. Fig. 22, hind-pretarsus with one claw shown. Fig. 23, forewing of male. Fig. 24, genital region of male, seen from above. Fig. 25, same, lateral view. Fig. 26, posterior process of male hypopygium, with its bristles, high magnification. Fig. 27, clasper. Fig. 28, aedeagus, lateral view. Fig. 29, genital region of female, seen from above. Fig. 30, same, lateral aspect. Fig. 31, posterior tergites. Fig. 32, seventh sternite, with lobe of eighth sternite and anterior gonapophysis. Fig. 33, posterior gonapophysis (high magnification). Fig. 34, tergite V of female.



Wygodzinsky del.

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Fig. 12, head and thorax of male, seen from above. Fig. 12a, scutellum and metanotum of same. Fig. 13, same, lateral aspect. Fig. 14, same, seen from below. Fig. 15, head of female, lateral view. Fig. 16, head and thorax of female, seen from above. Fig. 17, foreleg of male, antero-lateral view. Fig. 18, detail of fore-femur. Fig. 19, detail of fore-tarsus, one claw shown only. Fig. 20, detail of hind-femur. Fig. 21, detail of apical portion of hind-tibia. Fig. 22, hind-pretarsus with one claw shown. Fig. 23, forewing of male. Fig. 24, genital region of male, seen from above. Fig. 25, same, lateral view. Fig. 26, posterior process of male hypopygium, with its bristles, high magnification. Fig. 27, clasper. Fig. 28, aedeagus, lateral view. Fig. 29, genital region of female, seen from above. Fig. 30, same, lateral aspect. Fig. 31, posterior tergites. Fig. 32, seventh sternite, with lobe of eighth sternite and anterior gonapophysis. Fig. 33, posterior gonapophysis (high magnification). Fig. 34, tergite V of female.

slender, only very faintly curved at base, its joints of about equal length (Text-fig. 13); first joint on upper surface with two rows of four upwardly directed spines each. Antennae very slender, without distinct pilosity; length of first joint 6.0 mm.; relative length of joints = 1:0.58:0.47:0.17.

Pronotum distinctly shorter than head, about as wide as long, its sides rounded, its hind margin emarginate; antero-lateral processes short, truncate apically; slightly convex above, its posterior two-thirds with a delicate median longitudinal furrow. Lateral aspect as in Text-fig. 13. Ventral aspect of prothorax as in Text-fig. 16; apparent posterior border emarginate. Mesonotum dorsally as in Text-fig. 12, longer than pronotum, its sides subparallel; slightly convex above, its median longitudinal furrow extending for its whole length; hind margin almost straight, sharply excavate at centre. Mesonotum laterally with two subparallel carinae. Scutellum and post-scutellum as in Text-fig. 12a; the former semicircular, its centre elevated longitudinally, the elevation bifid at anterior margin. Disc of metanotum flattened, its apex tuberculiform, somewhat elevated.

Forelegs as in generic description and Text-figs. 17-19. Coxa dorsally at base with 2-3 spines, its posterior half on antero-ventral surface with a series of about eight spiniform bristles. Trochanter with 2-3 spines, the largest one strongly inclined, inserted upon a stout ventral process. Femur more or less parallel-sided; postero-ventral series beginning at base of joint, composed of five stout setiferous processes on which there are inserted strong spines, the latter being distinctly longer than the diameter of the joint. Antero-ventral series composed of one basal spine, inserted near base of joint, and 8-9 additional ones, which are much shorter and more delicate than those of the other series. The two intermediate series composed each of about 25-30 strong bristles of variable size, several of them being distinctly lateral of the principal row. Tibia and tarsus as in generic description and Text-figs. 17 and 19. Median and posterior legs simple, slender, posterior femur surpassing considerably apex of abdomen; bristles of tibia and femur stout and short (Text-fig. 20), those of apical portion of tibia slender and much longer (Text-fig. 21). Length of median femur 6, posterior femur 8.8, median tibia 9.1 and posterior tibia 10.2 mm. Median and hind-tarsi and claws as in generic description; pretarsus and claws as in Text-fig. 22.

Forewing attaining apex of abdomen, its venation and pattern as in Text-fig. 23; large discal cell a little longer than apical vein.

Abdomen elongate, slender, widest at middle. General aspect of genitalia as in Text-figs. 24-25. Hypopygium beset with rather numerous short bristles, apically with a very short rounded process (Text-fig. 26). Clasper slightly curved, not strongly chitinized apically, beset with numerous bristles of moderate length (Text-fig. 27). Aedeagus elongate, with a rather complex internal structure (Text-fig. 28).

#### *Apterous Female.*

Rather similar to male, which makes a detailed description unnecessary.

Length 7.0 mm. Pattern much as in male, dark pigment less extensive; abdominal sternites stramineous to whitish, darker near sides and hind border. Tergites stramineous, with an elongate median longitudinal stripe of subtriangular shape that does not attain the anterior margin of the segment (Text-fig. 34).

Eyes much smaller than in male (Text-fig. 15), their distance dorsally corresponding to a little less than twice their width. In lateral aspect the eyes do not attain dorsal or ventral surface of head. Meso- and meta-notum as in Text-fig. 76; the former with a median longitudinal furrow behind, the latter with a median longitudinal carina which is somewhat widened behind. Wing pads of fore- and hind-wings distinct, but very small (Text-fig. 16).

Abdominal tergites somewhat longer than wide, slightly emarginate behind, at hind margin in centre with a small but distinct tubercle which is not included in the dark stripe mentioned above (Text-fig. 31). General aspect of genital region (difficult to make out) as in Text-figs. 29-30. Seventh sternite (Text-fig. 32) with 1+1 sub-rectangular antero-lateral processes; posterior border indented in centre. Lobes of



slender, only very faintly curved at base, its joints of about equal length (Text-fig. 13); first joint on upper surface with two rows of four upwardly directed spines each. Antennae very slender, without distinct pilosity; length of first joint 6.0 mm.; relative length of joints = 1:0.58:0.47:0.17.

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eighth sternite very short, rounded. Anterior gonapophyses reduced to small chitinized rods (Text-fig. 32, A). Median gonapophyses (not figured) very delicate, of the usual fan-shaped type. Posterior gonapophyses (Text-fig. 33) well developed, subtriangular, their disc anteriorly with several short and stout bristles, their hind margin with some large and heavily chitinized spines.

*Types*: One male, holotype, one female, allotype, Australian Museum; one female, paratype, in coll. Armstrong; one male, one female, paratypes, author's collection.

*Locality*: Bogan River, N.S.W., J. W. T. Armstrong coll.

The species is dedicated to the memory of that great Australian entomologist R. J. Tillyard.

#### Subfamily HOLOPTILINAE.

##### PTILOCNEMUS LEMUR Westwood, 1840.

*Localities*: Bogan River, N.S.W., J. W. T. Armstrong Coll. (one male, author's collection); Inverell, N.S.W., Armstrong coll. (one female, author's collection; one male, one female in coll. Armstrong; one female, Australian Museum).

This pretty species is rather common in Australia. Its biology is not well known and it would be worth further study.

#### Subfamily STENOPODINAE.

##### SASTRAPADA AUSTRALICA Stal, 1874.

*Locality*: Acacia Plateau, N.S.W., Armstrong coll. (one male, author's collection).

This specimen corresponds well to Stal's description, differing only in its slightly larger size (12.5 mm.).

#### Subfamily REDUVIINAE.

##### ARCHILESTIDIUM ORNATULUM Breddin, 1900.

*Locality*: Acacia Plateau, N.S.W., J. W. T. Armstrong coll. (one male, one female, author's collection; two males in coll. Armstrong; one male, Australian Museum).

This is the genotype; only one additional species has been described (*cinnabarium* China, 1925, from Victoria).

#### Subfamily HARPACTORINAE.

##### ENDOCHUS (PNIRSUS) CINCTIPES Stal.

*Locality*: Inverell, N.S.W., Armstrong coll. (one female, author's collection).

The species was described from "Australia borealis". Though we have not seen the type, we are fairly sure of our determination, owing to the complete agreement of the specimen before us with the original description.

##### NYLLIUS Stal, 1859.

*Nyllius* Stal, 1859, Oefv. K. Vet.-Akad. Foerh., 16 (8): 365.

*Nyllius* Stal, 1868, Kongl. Sv. Vet.-Akad. Handl., 7 (11): 98.

*Nyllius* Stal, 1874, Kongl. Sv. Vet.-Akad. Handl., 12 (1): 42.

*Orgetorixa* China, 1925, Ann. Mag. Nat. Hist., 9 (11): 486.

There is nothing in China's description that would differentiate his *Orgetorixa* from Stal's *Nyllius*. It is possible that China's only species, *australicus*, is different from *Nyllius asperatus* Stal, considering its much larger size. We therefore maintain China's species for the time being.

##### NYLLIUS AUSTRALICUS (China, 1925).

*Locality*: Acacia Plateau, N.S.W., J. W. T. Armstrong coll. (one female, author's collection, one female in coll. Armstrong).

#### SUMMARY.

The author gives distributional and synonymical notes on some *Reduvioidea* of New South Wales. In the Enicocephalidae there is described *Usingeriella boganensis*, gen. nov., sp. n., apparently related to *Nesenidocephalus* Usinger, 1939, from the Pacific

eighth sternite very short, rounded. Anterior gonapophyses reduced to small chitinized rods (Text-fig. 32, A). Median gonapophyses (not figured) very delicate, of the usual fan-shaped type. Posterior gonapophyses (Text-fig. 33) well developed, subtriangular, their disc anteriorly with several short and stout bristles, their hind margin with some large and heavily chitinized spines.

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(Hawaii and the Philippines). In the Reduviidae there is described *Armstrongula tillyardi*, gen. nov., sp. n., an emesine related to the African *Orthunga* Stal. The harpactorine *Orgetorixa* China, 1925, is considered a synonym of *Nyllius* Stal, 1859. Distributional notes on some other reduviids are given.

*References.*

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